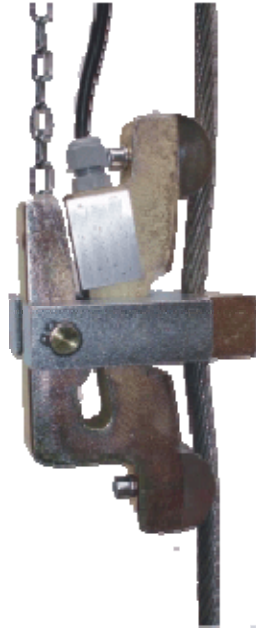


Itowa



USER MANUAL

LOAD LIMITER *SW*

USER MANUAL

LOAD LIMITER

SW

SINDITO, S.L.

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1. INTRODUCTION

The SW load limiter has been designed to avoid the overloads, which usually appear in lifter equipment as tower cranes, travelling cranes, elevators...

It avoids breakage in cables, hooks, wheels, beams and rails distortion, and the rest of damages and accidents caused by overloading.

The directive 89 / 392 / CEE considers that all of the new cranes must incorporate a load limiter and the new risk's prevention law for safety at work remarks the need for suppression of dangerous points, because the user is responsible for the applied loads, that cannot exceed the maximum allowable one.

1.1. DIRECTIVES AND STANDARDS.

CE Directives list considered as reference:

- 2009/23/EC (Non automatic weighing instruments)
- 2004/108/EC (Electro magnetic compatibility)
- 2006/95/EC (Low Voltage)
- 2006/42/EC (Machines)
- 1999/5/EC (Radio equipment); only version with radio module
- 2002/95/EC; 2003/118/EC; 2002/96/EC (RoHS and WEEE)

Other Standards and other documents as reference:

- FEM1.001
- CEI EN 61000-6-2 / 2006
- CEI EN 61000-6-4 / 2007
- CEI EN 61326-1 / 2007
- CEI EN 55011 / 2009
- 1999/519/EC recommendation (only version with radio module)
- ETSI EN 301489-3 1.4.1 version (only version with radio module)
- ETSI EN 300220-2 2.1.1 version (only version with radio module)

2. TECHNICAL DATA

SINDITO load limiters are used to control the overloads in lifter equipment as tower cranes, travelling cranes, elevators, etc. These load limiters are supplied with the required pre-tare, to facilitate at Technical services its assembly.

COMPULSORY:

Always YOU MUST TO TARE it once inserted with the normal crane's load, to +10%

The load limiter can get till 7 Tones of capacity for branch and a maximum wire diameter of 28mm and it have an overload resistance of 150% of its maximum capacity.

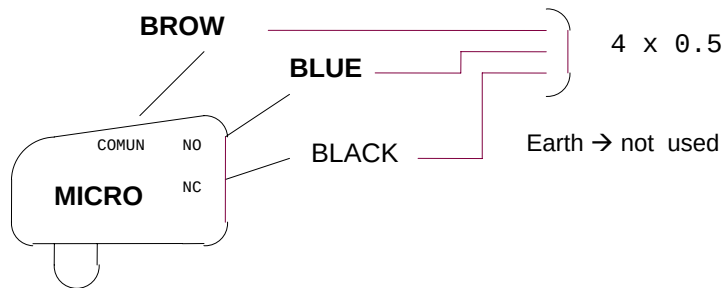
Under request we can supply the equipment with double system shot and finished in stainless.

Repeatability:	$\pm 1\%$
Operation limit temperatures:	$- 10^{\circ} C / + 60^{\circ} C$
Overload :	150 % F.E. (F.E. = Crane Rated load)
Finish:	bichromated
Switch:	10A 125/250 Vac -40°C +85°C
	According to EN61058-1 (10.000 cy)
	According to UL1054 (6.000 cy)
Maximum Wire Diameter:	28 mm
Maximum capacity per branch:	7 Tn

3. INSTALATION AND CONNECTION

3.1.1. CONNECTION

The mechanical load limiters of this range are supplied with 3 meters of cable to connect at a safe element.

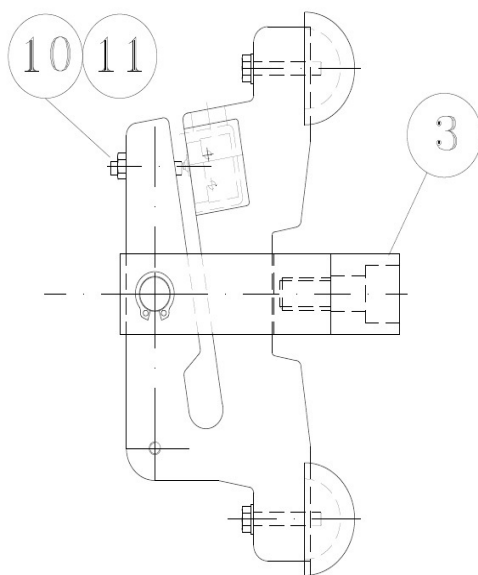


On the drawing you can see the colours of the wires on the hose supplied and the function of each one.

The connection will be:

- Brown wire → Micro com.
- Blue wire → Contact Normally Open
- Black wire → Contact Normally Close

3.1.2. INSTALLATION



To insert the cable:

Unscrew the 2 screws of the flange marked as "3". Introduce the load limiter into the fix cable of the crane as you can see of the drawing.

Put back the flange "3" and tighten the screws strongly till adjust against the base.

3.2. ADJUSTMENT PROCESS



ATTENTION: ANY CHANGE AT THE ADJUSTMENT SUPPLIED BY THE FACTORY WILL SUPOSE THE LOST OF THE GUARANTEE.

To make a specific setting, you can do as follows:

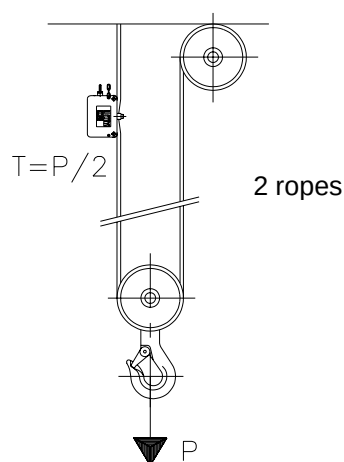
- 1º Slacken the nut and screw marked as "10-11"
- 2º To decrease the limit point, turn right on the sense of a clock's pointer the screw marked as "10"
- 3º To increase the limit point, turn left opposite sense of a clock's pointer the screw marked as "10"
- 4º Block the screw with the nut marked as "11" and apply an nut fixer to assure the selected point will be kept.
- 5º Finally fix the chain to the structure of the crane to avoid strong pulls in the cable of the micro.



IMPORTANT: THE LOAD LIMITERS ARE SUPPLIED WITH THE TARE REQUIRED BY THE CUSTOMER AND EQUIPED FOR AN SPECIFIC RANGE OF CABLE.

ATTENTION: BE AWARE IN THE ACCELERATION MOMENT, CAN HAPPEN A REQUEST OF BIGGER LOAD THAN THE SELECTED TARE WEIGHT(WATER HAMMER), TO CONTROL IT WE SUGGEST TO USE A TEMPORIZED RELAY.

3.3. CALCULATION OF CABLE TENSION



$$T = \frac{P}{r}$$

r : Number of ropes

P : Crane capacity

T : Cable tension (fixed cable)

4. MAINTENANCE & CONTROL

To avoid possible problems and minimize the failures and risk for people or things, it is necessary to make a systematic and regular maintenance of the load limiter and its components.

The maintenance steps and the period to make it, are specified by the manufacturer in this user manual.

4.1.1. DAILY CONTROL

Every time that user starts a new cycle of work with the load limiter, must check all the parts of the load limiter by visual examination of all the system.

4.1.2. REGULAR MAINTENANCE

The Regular maintenance of the equipment has to be done minimum **every 3 months** by experienced technical people.

In case of using : female screws, male screws, or a pin to fastening the equipment, check also it is in good conditions.

In case of damage of any part, please contact to SINDITO to replace the part with an original spare part.

4.1.3. CLEANING

If the load limiter is frequently used in greasy, dusty, damp , etc zones or spaces, it is necessary to clean regularly the equipment.

4.1.4. STORAGE FOR LONG TIME.

- General clearing of the equipment.
- Protect the load limiter with a waterproof element.
- Keep it in a dry place.
- Let it isolated to avoid to knock.

4.1.5. CALIBRATION / RE-CALIBRATION

The load limiters are supplied duly calibrated following the applicable Standards or Rules.

The load limiters can lose precision due different reasons:

- Sudden raising or pulls.
- Direct knocks to the load limiter
- Overloads
- Use in hostile environements: High temperatures, saltiness, high dump...

SINDITO recommends to make a **re-calibration once a year** to guarantee the precision and liability of the load limiter.

5. LIMITED GUARANTEE

ITOWA load limiters have a guarantee period of 12 months from the date of the order, as follows:

1.- Covering any default of manufacturing or ingrained bad habit, and the all the components, including the hand labour necessary to replace the defective pieces in our factory.

2.- The guarantee is not covering the transport cost to our factory, the transport cost is always at the customer charge.

3.- SINDITO keep the right of replacing the defective product for a new unit.

4.- This guarantee will not cover the damages produced by incorrect installation of the device, transport damages, any kind of handling in the device, any rough handling, or un-appropriate use, and decline any responsibility, for the direct or indirect damages produced in this last case.

In the same way, the guarantee is cancelled for damages produced for natural disasters, electrical shocks produced by storms and /or ground connections without following the Legal rules or Standards.

5.- The assessment of the damages or failures corresponds only to Technical service of SINDITO

6.- The repairs that can be done during the guarantee period will be done generally by the Technical Service Assistance of SINDITO

7.- In any case, the holder of the guarantee have the rights recognized by the Law.

8.- To request the Limited Guarantee, customer has to prove he has right of demand it, sending to SINDITO an original invoice copy, issued directly by SINDITO or for your usual supplier.